What is claimed is:

1. A method for setting up a side-stream communication session in a basic service set (BSS) in a wireless network, the communication session having a defined Quality of Service (QoS), the method comprising steps of:

detecting a first Path message and a first Resv message (Path/Resv message) of a RSVP protocol at a designated subnet bandwidth manager (DSBM) in a station having a point coordinator (PC), the first Resv message originating from a RSVP agent of a destination non-PC station in the BSS and requesting resource reservation for setting up a side-stream session between a source non-PC station and at least one destination non-PC station in the same BSS;

extracting at the DSBM a QoS parameter set and a classifier from the first Path/Resv message for the session;

determining at the DSBM whether to admit the side-stream session to the network based on the QoS parameter set defining the session and a channel status report on a medium access control (MAC) sublayer of the BSS;

when the side-stream session is admitted, setting up by a QoS management entity (QME) of the PC station a virtual side-stream (VSS) between the source non-PC station and the at least one destination non-PC station for transporting the side-stream session traffic; the DSBM being part of the QME in the PC station.

2. The method according to claim 1, further comprising steps of:

assigning by the QME a virtual stream identifier (VSID) to the VSS; and

instructing by the QME a frame scheduling entity (FSE) to create an entry corresponding to the VSS in a frame scheduling table of the FSE, the FSE being logically located in the MAC sublayer of the PC station, the entry in the frame scheduling table including the VSID and the QoS parameter set associated with the side-stream session.

3. The method according to claim 2, further comprising a step of sending a management frame from the PC station to the source non-PC station, the management frame including information relating to a setup of the VSS defined by the VSID, the classifier, and the QoS parameter set.

4. The method according to claim 3, further comprising steps of:

receiving the management frame by the source non-PC station;

passing the information contained in the management frame to a QME of the non-PC station;

instructing by the QME a frame classification entity (FCE) to create an entry corresponding to the VSS in a frame classification table of the FCE, the FCE being logically located in the LLC sublayer of the non-PC station, the entry in the frame classification table including the VSID and the classifier associated with the side-stream session; and

instructing by the QME a frame scheduling entity (FSE) to create an entry corresponding to the VSS in a frame scheduling table of the FSE, the FSE being logically located in the MAC sublayer of the non-PC station, the entry in the frame scheduling table including the VSID and the QoS parameter set associated with the side-stream session.

5. The method according to claim 4, further comprising steps of:

sending a management frame from the PC station to each destination non-PC station in the BSS, the management frame including information relating to a setup of the VSS defined by the VSID.

6. The method according to claim 2, further comprising steps of:

detecting a second Path/Resv message at the DSBM, the second Path/Resv message originating outside the DSBM and requesting a change of at least one QoS parameter value associated with the side-stream session;

extracting at the DSBM the changed QoS parameter set and the classifier from the second Path/Resv message for the session;

finding at the QME of the PC station the VSID that is associated with the extracted classifier;

determining at the QME of the PC station whether to grant the request for change based on the changed QoS parameter set and the channel status report;

when the request is not granted, operating the side-stream session according to the QoS parameter set contained in the frame scheduling table in the PC station for the VSS; and

when the request is granted, instructing by the QME of the PC station the FSE of the PC station to update the entry in the frame scheduling table corresponding to the VSS by changing at least one QoS parameter value associated with the VSS based on the requested change.

7. The method according to claim 6, wherein when the request is granted, further comprising steps of:

sending a management frame from the PC station to the source non-PC station, the management frame including information relating to a change of at least one QoS parameter value associated with the side-stream session defined by the VSID.

8. The method according to claim 7, further comprising steps of:

receiving the management frame by the source non-PC station;

passing the information contained in the management frame to the QME of the non-PC station; and

instructing by the QME of the non-PC station the FSE of the non-PC station to update the entry corresponding to the VSS in the frame scheduling table of the FSE by

changing at least one QoS parameter value associated with the VSS based on the information contained in the received management frame.

9. The method according to claim 2, further comprising steps of:

detecting a third Path/Resv message at the DSBM, the third Path/Resv message originating outside the DSBM and requesting that a side-stream session be terminated;

extracting at the DSBM the classifier from the third Path/Resv message for the session;

finding at the QME of the PC station the VSID that is associated with the extracted classifier;

instructing by the QME of the PC station the FSE of the PC station to delete the entry corresponding to the VSS in the frame scheduling table;

sending a management frame from the PC station to the non-PC station sourcing the VSS defined by the VSID, the management frame including information relating to a teardown of the VSS.

10. The method according to claim 9, further comprising steps of:

receiving the management frame by the source non-PC station;

passing the information contained in the management frame to the QME of the non-PC station;

instructing by the QME of the non-PC station the FCE of the non-PC station to delete the entry corresponding to the VSS in the frame classification table; and

instructing by the QME of the non-PC station the FSE of the non-PC station to delete the entry corresponding to the VSS in the frame scheduling table.

11. The method according to claim 9, further comprising a step of sending a third management frame from the PC station to each destination non-PC station in the BSS, the third management frame including information relating to a teardown of the VSS defined by the VSID.

12. The method according to claim 9, further comprising steps of:

detecting a timeout event at the DSBM, the timeout event being triggered by a predetermined length of time elapsing and not receiving one of the first Path/Resv message and the second Path/Resv message for a side-stream session;

extracting at the DSBM the classifier from one of the first Path/Resv message and the second Path/Resv message previously received for the side-stream session;

finding at the QME of the PC station the VSID that is associated with the extracted classifier;

instructing by the QME of the PC station the FSE of the PC station to delete the entry corresponding to the VSS in the frame scheduling table;

sending a management frame from the PC station to the non-PC station sourcing the VSS defined by the VSID, the management frame including information relating to a teardown of the VSS.

13. The method according to claim 12, further comprising steps of:

receiving the management frame at the source non-PC station;

passing the information contained in the management frame to the QME of the non-PC station;

instructing by the QME of the non-PC station the FCE of the non-PC station to delete the entry corresponding to the VSS in the frame classification table; and

instructing by the QME of the non-PC station the FSE of the non-PC station to delete the entry corresponding to the VSS in the frame scheduling table.

14. The method according to claim 13, further comprising a step of sending a third management frame from the PC station to each destination non-PC station in the BSS, the third management frame including information relating to a teardown of the VSS defined by the VSID.

15. The method according to claim 1, wherein before the step of detecting the Resv message at the DSBM, the method comprises steps of:

receiving the first Path message for the side-stream session at the DSBM, the first Path message being sent from a subnet bandwidth manager (SBM) of the source non-PC station in the BSS, the SBM being part of the QME in the non-PC station;

propagating the first Path message for the side-stream session from the DSBM to an RSVP agent of each destination station, the RSVP agent being an SBM when the destination station is a non-PC station in the BSS;

receiving the first Resv message for the side-stream session at the DSBM, the first Resv message being sent from an RSVP agent of a destination station, the RSVP agent being an SBM when the destination station is a non-PC station in the BSS;

wherein after the step of determining at the DSBM whether to admit the side-stream session to the network, the method further comprises a step of sending the first Resv message for the session from the DSBM to the SBM of the source non-PC station in the BSS.

16. The method according to claim 1, wherein the wireless network is a wireless local area network (WLAN).

17. A point coordinator (PC) station in a basic service set (BSS) in a wireless network, the PC station comprising:

a designated subnet bandwidth manager (DSBM) detecting a first Path message and a first Resv message (Path/Resv message) of a RSVP protocol, the first Resv message originating from a RSVP agent of a destination non-PC station in the BSS and requesting resource reservation for setting up a side-stream session between a source non-PC station and at least one destination non-PC station in the same BSS, the DSBM extracting a Quality of Service (QoS) parameter set and a classifier from the first Path/Resv message for the session, and determining whether to admit the side-stream session to the network based on the QoS parameter set defining the session and a channel status report on a medium access control (MAC) sublayer of the BSS; and

a QoS management entity (QME) responsive to the admitted side-stream session by setting a virtual side-stream (VSS) for transporting the side-stream session traffic between the source non-PC station and the at least one destination non-PC station, the DSBM being part of the QME in the PC station.

18. The PC station according to claim 17, wherein the PC station includes a frame scheduling entity (FSE) having a frame scheduling table, the FSE being logically located in a MAC sublayer of the PC station, and

wherein the QME assigns a virtual stream identifier (VSID) to the VSS, and instructs the FSE to create an entry corresponding to the VSS in the frame scheduling table of

the FSE, the entry in the frame scheduling table including the VSID and the QoS parameter set associated with the side-stream session.

19. The PC station according to claim 18, wherein the QME sends a management frame from the PC station to the source non-PC station, the management frame including information relating to a setup of the VSS defined by the VSID, the classifier, and the QoS parameter set.

20. The PC station according to claim 19, wherein the source non-PC station includes a local QME, a local FCE that is logically located in the LLC sublayer of the source non-PC station and a local FSE that is logically located in the MAC sublayer of the source non-PC station, the source non-PC station receiving the management frame and passing the information contained in the management frame to the local QME,

wherein the source non-PC station receives the management frame and passes the information contained in the management frame to the local QME,

wherein the local QME instructs the local FCE to create an entry corresponding to the VSS in the frame classification table of the FCE, the entry in the frame classification table including the VSID and the classifier associated with the side-stream session; and

wherein the local QME instructs the local FSE to create an entry corresponding to the VSS in the frame scheduling table of the FSE, the entry in the frame scheduling table including the VSID and the QoS parameter set associated with the side-stream session.

21. The PC station according to claim 20, wherein the non-PC station sends a management frame to each destination non-PC station in the BSS, the management frame including information relating to a setup of the VSS defined by the VSID.

22. The PC station according to claim 18, wherein the DSBM detects a second Path/Resv message, the second Path/Resv message originating outside the DSBM and requesting a change of at least one QoS parameter value associated with the side-stream session, the DSBM extracting the changed QoS parameter set and the classifier from the second Path/Resv message for the session, and

wherein the QME of the PS station finds the VSID that is associated with the extracted classifier, and determines whether to grant the request for change based on the changed QoS parameter set and the channel status report,

wherein when the request is not granted, side-stream session is operated according to the QoS parameter set contained in the frame scheduling table in the PC station for the VSS, and

wherein when the request is granted, the QME of the PC station instructs the FSE of the PC station to update the entry in the frame scheduling table corresponding to the VSS by changing at least one QoS parameter value associated with the VSS based on the requested change.

23. The PC station according to claim 22, wherein when the request is granted, the PC station sends a management frame to the source non-PC station, the management frame including information relating to a change of at least one QoS parameter value associated with the side-stream session defined by the VSID.

24. The PC station according to claim 23, wherein the source non-PC station includes a local QME, and a local FSE that is logically located in the MAC sublayer of the source non-PC station, the source non-PC station receiving the management frame and passing the information contained in the management frame to the local QME,

wherein the source non-PC station receives the management frame and passes the information contained in the management frame to the local QME of the non-PC station, the local QME of the non-PC station instructing the local FSE of the non-PC station to update the entry corresponding to the VSS in a frame scheduling table of the FSE by changing at least one QoS parameter value associated with the VSS based on the information contained in the received management frame.

25. The PC station according to claim 18, wherein the DSBM detects a third Path/Resv message, the third Path/Resv message originating outside the DSBM and requesting that a side-stream session be terminated, the DSBM extracting the classifier from the third Path/Resv message for the session,

wherein the QME of the PC station finds the VSID that is associated with the extracted classifier, the QME of the PC station instructing the FSE of the PC station to delete the entry corresponding to the VSS in the frame scheduling table, and

wherein the PC station sends a management frame to the non-PC station sourcing the VSS defined by the VSID, the management frame including information relating to a teardown of the VSS.

26. The PC station according to claim 25, wherein the non-PC station sourcing the VSS includes a local QME, a local FCE that is logically located in the LLC sublayer of the source non-PC station and a local FSE that is logically located in the MAC sublayer of the source non-PC station, the source non-PC station receiving the management frame and passing the information contained in the management frame to the local QME,

wherein the non-PC station sourcing the VSS receives the management frame and passes the information contained in the management frame to the local QME of the non-PC station,

wherein the local QME of the non-PC station instructs the local FCE of the non-PC station to delete the entry corresponding to the VSS in the frame classification table, and

wherein the local QME of the non-PC station instructs the local FSE of the non-PC station to delete the entry corresponding to the VSS in the frame scheduling table.

27. The PC station according to claim 25, wherein the PC station sends a third management frame to each destination non-PC station in the BSS, the third management frame including information relating to a teardown of the VSS defined by the VSID.

28. The PC station according to claim 25, wherein the DSBM detects a timeout event at the DSBM, the timeout event being triggered by a predetermined length of time elapsing and not receiving one of the first Path/Resv message and the second Path/Resv message for a side-stream session, the DSBM extracting the classifier from one of the first Path/Resv message and the second Path/Resv message previously received for the side-stream session,

wherein the QME of the PC station finds the VSID that is associated with the extracted classifier, and instructs the FSE of the PC station to delete the entry corresponding to the VSS in the frame scheduling table, and

wherein the PC station sends a management frame to the non-PC station

sourcing the VSS defined by the VSID, the management frame including information relating to a teardown of the VSS.

29. The PC station according to claim 28, wherein the non-PC station sourcing the VSS includes a local QME, a local FCE that is logically located in the LLC sublayer of the source non-PC station and a local FSE that is logically located in the MAC sublayer of the source non-PC station, the source non-PC station receiving the management frame and passing the information contained in the management frame to the local QME,

wherein the non-PC station sourcing the VSS receives the management frame and passes the information contained in the management frame to the local QME of the non-PC station,

wherein the local QME of the non-PC station instructs the local FCE of the non-PC station to delete the entry corresponding to the VSS in the frame classification table, and

wherein the local QME instructs the local FSE of the non-PC station to delete the entry corresponding to the VSS in the frame scheduling table.

30. The PC station according to claim 29, wherein the PC station sends a third management frame to each destination non-PC station in the BSS, the third management frame including information relating to a teardown of the VSS defined by the VSID.

31. The PC station according to claim 17, wherein before DSBM detects the Resv message, the DSBM receives the first Path message for the side-stream session, the first Path message being sent from a subnet bandwidth manager (SBM) of the source non-PC station in the BSS, the SBM being part of the QME in the non-PC station;

wherein the DSBM propagates the first Path message for the side-stream session to an RSVP agent of each destination station, the RSVP agent being an SBM when the destination station is a non-PC station in the BSS,

wherein the DSBM receives the first Resv message for the side-stream session, the first Resv message being sent from an RSVP agent of a destination station, the RSVP agent being an SBM when the destination station is a non-PC station in the BSS, and

wherein after the DSBM determines whether to admit the side-stream session to the network, the DSBM sends the first Resv message for the session to the SBM of the source non-PC station in the BSS.

32. The PC station according to claim 17, wherein the wireless network is a wireless local area network (WLAN).